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NOTES ON THE NESTING OF THE GOSHAWK IN POTTER COUNTY, PENNSYLVANIA

BY GEORGE MIKSCH SUTTON

The nesting of the Goshawk (*Astur atricapillus atricapillus*) has been noted and studied in Warren County, Pennsylvania, for years past, by Messrs. Ralph B. Simpson and Harry Grantquist, of Warren. While the breeding range of the bird has thus been known to extend southward into the northern and mountainous counties of Pennsylvania, the species is of sufficient rarity in the State to warrant special notice wherever it is found. I therefore welcomed the recent opportunity of visiting the southern part of Potter County with the intention of becoming more familiar with the home-life of this splendid bird of prey.

Upon establishing myself at Conrad (locally known only as Hull's Station) I soon found that while the Goshawk was considered rare by the local residents, there were positive evidences of the previous nesting of the birds in the region, and since either specimens or remains of specimens were examined to establish the accuracy of the records beyond question I do not hesitate to enter them here.

On May 10, 1923, at a point in extreme southeastern Potter County, not far from Slate Run, Lycoming County, Mr. Hayes Englert found a nest about forty-five feet up in a large beech tree. The nest held four half-grown young at the time and was a huge, bulky affair built into a deep crotch. The female bird only was seen, and she was subsequently shot while feeding from the carcass of a black bear. I examined this large and beautifully plumaged specimen. During the following fall season several Goshawks were seen in the region of State Game Refuge No. 7, in extreme southeastern Potter County, and one large female bird was shot on November 1, 1923.*

On May 25, 1924, at Roulette, Potter County, Mr. Harry Van Cleve found a huge nest, thirty-five feet from the ground in a three-prong crotch of a comparatively small beech tree. The nearby trees were all higher than the one containing the nest, but the crotch in which

*Specimen preserved and examined.

the nest was placed had evidently been chosen with considerable care. At this date there were four small, downy white young in the nest. The tree was shortly thereafter felled and the nest and young destroyed. One young bird which was not noticed among the debris when the tree was felled was later found in a mummified condition.

On March 20, 1925, at Conrad, Potter County, Mr. Ernest Hunsinger first observed the mated pair of Goshawks in the woods where they subsequently reared their young. The nest was completely built at the time and presumably had been used during the previous year; but not until March 31 was it actually determined that the birds were using the nest, since on this date three eggs were found. There was heavy snow on the ground when the birds were first seen and during most of the period when the eggs were known to be in the nest. The spring usually comes late in these wild portions of the Pennsylvania mountains, and the winters are usually severe.

On April 27 there were two downy white young in the nest, only recently hatched. The third egg, which did not hatch, was already covered with debris, and was not seen at the time of this visit. On May 12 the young birds had grown considerably. The flight feathers were appearing all along the wings, and rows of dark heavy feathers showed on the chest, head and shoulders. On this date the head of what was supposed to be a brown leghorn hen was found neatly severed from the neck, and lying to one side on the rim of the nest. It occurs to me that this might have been the head of a Ruffed Grouse. The male bird, while observed once or twice, was always very shy, and several times it was feared that he had been killed. The female was always close at hand, however, and dangerously bold whenever the nesting tree was approached.

Not until May 19 did I have opportunity to visit the nest myself, however, and I made plans to remain at the nesting tree all day, so that I might personally witness a little of the family life of the handsome birds. As we crept up the narrow mountain road, wide valleys spread about us, fresh green with new leaves which were obviously not as far advanced as they were farther south in Dauphin County, or west in Crawford County where I had just been. The forest was composed chiefly of deciduous trees although there were a few pines and spruces, and the deeper ravines were crowded with hemlocks. Maple and beech predominated however, and there were occasional patches of yellow birch and slender white birch on the plateau-like ridges.

When we were within about six hundred yards of the nest the female bird came out to meet us. She screamed and circled about and

escorted us invectively to her nest where her fury increased and where she swept down at the man who happened to be nearest the home tree. While the tree was being climbed the female bird screamed almost constantly and she struck fiercely with her talons at every dive. The commotion straightway aroused the two well-feathered young, although the male parent did not appear. The young birds, hunched up grotesquely in their high cradle pranced out to the peripheral twigs and the smaller one after leaving the nest and mounting a nearby branch set up a series of screams which resembled those of the mother, but were higher and less powerful. When the foundation of the nest was finally disturbed the young male bird (the smaller of the two at least and the one which had crawled out of the nest) swung into the air, and, flapping uncertainly, reached the ground two hun-



Photograph by J. J. Slautterback.

NEST OF THE GOSHAWK. SHOWING NESTLING MALE ABOVE, AND, AT LEFT OF SUTTON, THE FEMALE PARENT WHICH HAS STRUCK.

dred feet away. The larger bird (presumably a female) was sullen in temperament and stocially refused to leave or to cry out. The nest was not carefully examined since it was my purpose to leave conditions as much undisturbed as possible so as to be able to witness the normal home life of the birds.

Before my companions left me I crawled into a rudely constructed blind where I crouched motionless, hoping that I would not be detected by the hawks. The female bird drove the departing group of men to the edge of the woods and then returned, calmer for an instant or two, apparently, and then, spying me without the slightest difficulty,

redoubled her fury and bore down upon me with savage intent. Intrepid and insistent she swooped at me from all directions and only the branches of the blind kept me from the direct blows of her feet although the protecting boughs cracked and snapped at each onslaught. My being alone doubtless increased her daring and she perched at a distance of only twelve feet and screamed in my face, her bright eyes glaring, and her powerful beak expectantly parted. To lessen the agitation I gathered up the young bird, obviously against his own wishes, and started across an open space toward a log where I intended to place him. I had scarcely wormed out of my little blind when I was soundly thumped on the shoulders, and before I reached the log where I stationed the young bird I had been struck either an averted blow or a direct one, half a dozen times. I hastened back to the blind as soon as possible. With the Sept camera in hand I photographed the attacking bird, and while I tried to steel my nerve to accept the blows of her feet without flinching, I found I could not. Every time, when I saw her glowing eyes partly opened bill, and loosely poised feet descending upon me I ducked and raised my arms in spite of myself. Had I not worn a strong cap and a cloth about my neck no doubt her talons would have brought blood more than once; and it was evident that the claw of the hind toe was most powerful and effective, since that nail dug in and dragged as the bird passed on.

During the course of the day I was almost constantly attacked and screamed at by the female bird. For eight hours she remained at her post, and she never seemed to become accustomed to me, although I purposely disturbed nothing, and made little commotion. Her anger was heightened by the screaming of the young bird of course, and any movement on my part made her attacks more vehement. Once she struck a hard blow at my protruding feet when I tried to scrape a biting black fly from one ankle with the toe of the other foot.

From 8:00 A. M. to 1:30 P. M. I heard her give only two call-notes. The most commonly given was the well known "*Ca, ca, ca, ca*" rapidly repeated and with a heavy goose-like quality that was noticeable. The first two syllables of such a series of screams were often hoarse and throaty with a sinister, double-toned character. Sometimes when the bird was passing swiftly through the trees to a perch she called "*Kuk, kuk, kuk*" in deep, somewhat milder tones. This note was decidedly like the warning note of the Blue Goose as heard in the James Bay region.

From 12:15 to 1:30 P. M. I remained almost absolutely quiet and feigned sleep as best I could in spite of the innumerable black flies

which became increasingly annoying as the day advanced. But after this period of quiet the voice of the female bird suddenly changed, and her screams were so high, clear and plaintive that I was honestly startled. This new note sounded like "*Kee-a-ah*", and reminded me of the call of the red-shoulder, but was more powerful and at the same time more musical, and had a plaintive character that rather affected my sympathy. I sensed immediately that this call indicated a change of some kind in the bird's attitude. Suddenly the dark, swiftly flying male appeared, bearing in his claws a black squirrel. His scream as he approached the nest was long, high and thin, and not nearly so powerful as that of his mate. I moved only a trifle to be able to observe to better advantage, and instantly the male bird departed and the female swooped down upon me, angrier than ever. The male bird stayed about, calling in rather weak tones which were much like those of the red-shoulder, with a more quavering quality. The male never dived at me; but later he perched above me with a chipmunk in one foot, and I glimpsed his handsome, dark coloration through the moving leaves. When he was perched he gave a unique single call note resembling "*Kek*" and more than once I heard that note in the distance although I could not spy the bird.

To the best of my knowledge the young bird in the nest was not fed all day, and the one on the ground certainly not before late afternoon, but they never raised any voluntary commotion although they must have been hungry. The female bird did not feed until 4:00 P. M., at which time she took her attention from me, and with magnificent ease and swiftness pounced upon a chipmunk almost under my nose, and proceeded to strangle the kicking rodent at a distance of only about twenty feet. She did not bite the creature at all, so far as I could see. When the little mammal was dead she ate it ravenously, making hoarse guttural sounds while she ate, but she was evidently careful to pick it into small pieces before swallowing. Later she rushed in to the young bird on the ground and fed it small portions. The young bird did not cry out.

Toward evening the female bird paid somewhat less attention to me, accepting me, I suppose, as part of her daily fate. Her attacks, however, were more to be feared, because she screamed less and there was no way of knowing of her approach. But when my companions returned to get me she sailed off to meet them and renewed her tireless calling at a safe distance. The presence of several men seemed to frighten her considerably. I climbed to the nest twice. It was a great bulky affair, about three and one-half feet across, and three feet in

depth, and rather beautifully designed for so large a structure. It was placed in a three-prong crotch about thirty-five feet from the ground in a comparatively slender beech. The nest was probably not more than two seasons old, since there were but two recognizable layers in the lining. In the shallow cup of the nest where the sullen nestling female sat were the hindquarters of a large black squirrel from which nearly all the hair had been pulled, and a chipmunk, freshly killed, and without a spot of blood or broken bone anywhere in its body—as neatly laid out as a museum specimen! Fresh sprigs of hemlock were laid about; and an abundance of hemlock needles in the nest were evidence that this fresh lining had been often renewed. About four hundred pellets, varying in size considerably, were removed for examination, and about two and one-half inches under the debris was found the infertile egg! The nest was surprisingly clean.

Careful examination of the pellets showed at once a surprisingly small proportion of feathers although it will be admitted that before they were brought to the nest the bird bodies may have been completely plucked. The young had evidently been fed almost altogether upon chipmunks, although fur and some small bones of gray and black squirrels, weasels and white-footed mice were also found. At the foot of the tree there were no Ruffed Grouse remains whatever, although there was a primary feather from the wing of a Hairy Woodpecker in the nest. A pair of Slate-colored Juncos which were nesting nearby paid not the slightest attention to the hawks, and so far as I could see the female bird never once noticed them. From all my observation at this time I should be inclined to revise my opinions considerably as to the bird-killing proclivities of this predatory species, although the local abundance of chipmunks doubtless affected the bird's bill-of-fare.

The eye of the adult female was not red; it was a bright brownish orange, paler about the pupil. The eye of the male bird, observed at a distance, was seemingly brighter and a more scarlet red; and an immature male, shot on the same day not far away (probably a last year's bird) had brilliant yellow eyes. The irides of the nestlings were pale blue-gray in color, and the cere and feet were dull grayish green.

The most memorable thing about the day's experience was the method of attack of the female bird, which has partly explained to me the ease with which some of these birds capture their prey. When the Goshawk left her perch to strike at me her set wings and slim body were for several seconds almost invisible and the only actual move-

ment perceptible was the increase in the size of her body as she swiftly approached. Three times at least I was looking directly at the approaching bird *and did not see her at all* because the lines of her wings and body so completely harmonized with the surroundings, and the front view was comparatively so small.

In alighting the bird struck heavily and often the dead branches were completely broken off. Her every movement combined power, grace, and swiftness in an amazing degree, and only once, as she sped by me did I succeed in whacking her with a stick. She seemed so surprised at my ability to fight back that after my clumsy victory she was quiet for over ten minutes and viewed me pensively from the top of a distant tree!

The bird often sat upright with one foot drawn up among the belly feathers or protruding a short distance. The fluffy under tail coverts were very prominent and always obscured the base of the tail from the front by sticking far out on either side.

PENNSYLVANIA BOARD OF GAME COMMISSIONERS,
HARRISBURG, PA.

OBSERVATIONS ON SHORE BIRDS IN CENTRAL OKLAHOMA IN 1924

BY MARGARET MORSE NICE

By great good fortune for the birds and us, the wet winter and spring of 1924 changed what had been a low swampy spot in the midst of a cornfield into a shallow pond, not far from our home in Norman, Oklahoma. The farmer who owned the land did not share our view of the matter for he put in an elaborate drain, but luckily for the ducks, the shorebirds and us, he made the mistake of placing it too high, so the pond remained and the birds flourished. Our first visit was made on April 4; from then until June 10 we made trips to it two or three times a week, except for the first ten days in May when we did not go at all. All the birds but a pair of Killdeers were transients, there being no suitable cover for nests for the few species that do breed in the region.

Not many birds except ducks and shorebirds frequented this pond. Of these, the Black Terns were the most entrancing as they coursed gracefully over the water. Twenty were seen May 11 and about fifty the next day (most of them following a farmer who was harrowing a nearby field); from the 14th to 20th there were thirty to forty, but after that their numbers diminished until only two were seen May 30;